REMARKS

Claims 1-13 are pending, claims 1 and 8 having been amended herein and claims 12 and 13 having been added, as explained below.

Initially, applicants point out that the second paragraph of claim 8 has been amended to comply with method claim format, as the Examiner noted.

Claims 1-11 are rejected under 35 U.S.C. § 103(a) based on JP 11-149278 (*Shingo*) in view of US Patent 6,040,826 to *Furukawa*.

Shingo is directed to a liquid crystal driver that is capable of changing between a 4 gradation display and a binary display. Paragraphs [0034] – [0038] in the machine translation of *Shingo* discuss the decoder, 4 gradation display operation and binary display operation. As previously discussed in applicant's Response B filed on January 12, 2005, the present invention is significantly different from *Shingo* in the arrangement of display data in a memory address space. The Examiner acknowledges this difference and now asserts that applicant's display data arrangement is taught by *Furukawa*.

Furukawa's driving circuit (for driving a matrix-type display) includes a plurality of line buffers, each of which is divided into two regions. In the case in which 4 scanning lines are simultaneously selected, there are four line buffers indicated as four memories 21-24 in Fig. 5. During one horizontal display period, four lines of input data are written, one line from region I of each memory 21-24; during the next horizontal display period, the next four lines of input data are written, one line from region II of each memory 21-24. Thereafter, four lines of input data are alternately written in regions I and II of the four memories during the horizontal display periods. In reading data from the memories, data is alternately read from regions I and II of the four memories every four horizontal non-display periods. The effect is that one of the regions is used for writing while the other is used for reading. From the line buffers data is then transmitted to a frame buffer

As such, *Furukawa* clearly does not teach memory in the form of a single display data RAM, as recited in each of applicant's independent claims. Unlike the memory address space in *Shingo*, even as modified as by *Furukawa*, the

memory address space in applicants' invention is contained in a single display data RAM and is arranged such that the display data is organized according to the groups of L pixels and bit positions for pixels in a particular group. The language describing the memory address space arrangement in each of independent claims 1 and 11 has been slightly modified to better capture this inventive arrangement.

For example, in the illustrated arrangement, line [0] contains L (=4 here) upper bits of display data, one for each of the L pixels corresponding to the intersection of a first segment electrode and the L common electrodes selected in a first selection period, followed by the L corresponding lower bits for those pixels. The next eight bits in line [0] are for the L pixels corresponding to the intersection of a second segment electrode and that same group of L common electrodes selected in the first selection period. Of these eight bits, the first four are the upper bits for these L pixels and the next four are the respective lower bits. New claims 12 and 13 have been added to more specifically describe this arrangement of applicant's memory address space by reciting that, within a given pixel group, the memory address space is further arranged according to upper and lower bit positions for pixels in that group. In so doing, the invention of each of claims 12 and 13 further distinguishes over the combination of *Shingo* and *Furukawa*.

Arranging the data as set forth in claim 1, together with employing the other claimed features, a single display driver apparatus having improved general applicability is achieved. The memory space in the display driver apparatus is arranged to allow a greater variety of display data to be stored, such that the apparatus can be controlled, for example, to more smoothly perform a scroll display on the liquid crystal panel. The claimed memory space arrangement advantageously provides a display driver with more versatility and general applicability than that of prior display drivers including the ones shown in *Shingo* and *Furukawa*.

Accordingly, it is respectfully submitted that each of the independent claims 1 and 8 is patentably distinguishable over *Shingo* in view of *Furukawa*, and that each of the remaining dependent claims is patentable for at least the

same reasons as its independent claim. In view of the foregoing, applicants respectfully request favorable reconsideration of the present application.

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